Listing and Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A key synchronization method for a wireless network comprising:

setting a current encryption key and an old encryption key at an access point in the wireless network;

generating a new encryption key at the access point;

resetting the current encryption key to equal the newly generated encryption key;

resetting the old encryption key to equal an encryption key being used by a station in communication with the access point;

communicating the newly generated encryption key to the station in an encrypted form using the old encryption key; and

indicating a decryption failure for a data frame received from the station when the encryption key used by the station does not match the current encryption key, wherein a data frame that failed to decrypt using the current encryption key is decrypted using the old encryption key.

2. (Canceled)

3. (Currently Amended) The method according to claim 1, further comprising:

incrementing an out-of-sync counter in the access point when said decryption~~ing~~ failure~~s~~ occurs due to the ~~station~~ encryption key used by the station not matching the current encryption key; and

decrypting received data frames associated with said out-of-sync counter at the access point using the old encryption key.

4. (Original) The method according to claim 1, further comprising:

decrypting, using the new keys the received data frame from the station when the access point determines the station sending the received packet is using the new

key, said access point starting to use the new key when a first data frame correctly encrypted with the new key is received from the station;

re-setting the old key to equal the current key when decryption is successful; and

re-setting an out-of-sync counter to zero upon successful decryption.

5. (Currently Amended) The method according to claim 1, further comprising setting the old encryption key equal to a null value, said null value representing a no encryption mode.

6. (Currently Amended) The method according to claim 1, further comprising setting the current encryption key and the ~~first~~old encryption key to a null value, said null value representing a no encryption mode.

7. (Original) The method according to claim 1, wherein said step of setting is performed by the access point for each station in the wireless network.

8. (Currently Amended) A key synchronization mechanism for a wireless network comprising:

at least one station in the wireless network; and

at least one access point in the wireless network maintaining an old encryption key and a new encryption key through a key rotation interval for each of said at least one station, said access point using said new encryption key when a first data frame correctly encrypted with said new encryption key is received from said at least one station and using said old encryption key when decryption of a data frame received from said at least one station fails due to mismatched keys.

9. (Original) The key synchronization mechanism according to claim 8, wherein said at least one access point further maintains an out-of-sync counter to track the number of packets where decryption fails due to mismatched keys.

10. (Original) The key synchronization mechanism according to claim 8, wherein said at least one access point is capable of setting the old encryption key to a null value, said null value representing a no encryption mode.

11. (Original) The key synchronization mechanism according to claim 8, wherein said at least one access point is capable of setting the new encryption key to a null value, said null value representing a no encryption mode.

12. (Original) The key synchronization mechanism according to claim 8, wherein said at least one access point initially sets the old encryption key to a null value.

13. (Original) The method according to claim 1, wherein the new encryption key is generated at the access point upon expiration of a key refresh interval.

14. (Currently Amended) The method according to claim 3, wherein said out-of-sync counter comprises a predetermined threshold that if exceeded causes ~~the termination of~~ communication to terminate between the access point and a source of the data frames causing the threshold of said out-of-sync counter to be exceeded.